

Listing of the Claims

1. (Currently Amended) A plunger-type pump comprising:
a packing bore for a reciprocating plunger packing cartridge for use in a packing bore of a
plunger-type pump, wherein the packing bore has a generally cylindrical interior wall and a seat
and a removable gland, and;
a [[the]] packing cartridge, wherein the packing cartridge comprises comprising:
 - a. a generally-cylindrical sleeve having an outer cylindrical profile ~~adapted to be~~ at
least partially positioned in the packing bore;
 - b. a first abutment ring positioned in the sleeve;
 - c. a second abutment ring positioned in the sleeve and co-axially spaced apart from
the first abutment ring;
 - d. telescoping structures operatively positioned between the first abutment ring and
the second abutment ring to allow for squeezing of the first abutment ring and second abutment
ring co-axially closer to one another; and
 - e. a retaining ring operatively positioned between the telescoping structures to retain
the telescoping structures together and to allow for squeezing of the first abutment ring and
second abutment ring co-axially closer to one another;wherein the packing cartridge is ~~adapted to be~~ positioned in the packing bore between the
seat and the removable gland ~~[[and]]~~ so that the squeezing of the first abutment ring and the
second abutment ring closer together ~~is~~ ~~can be~~ provided by tightening the removable gland over
the packing cartridge.
2. Canceled.
3. (Currently Amended) The plunger-type pump packing cartridge according to Claim 2,
wherein the telescoping structures have at least sufficient overlapping travel to allow for the
expected crushing of packing during the operation of a plunger through the packing cartridge.

4. (Currently Amended) The plunger-type pump packing cartridge according to Claim 2, further comprising: a spring operatively positioned between the first abutment ring and the second abutment ring.
5. (Currently Amended) The plunger-type pump packing cartridge according to Claim 4, wherein the telescoping structures have at least sufficient overlapping travel to help maintain the first abutment ring and second abutment ring in substantial co-axial alignment while the spring is anywhere between a substantially relaxed condition and a substantially compressed condition.
6. (Currently Amended) The plunger-type pump packing cartridge according to Claim 1, wherein the sleeve further comprises a first sleeve portion and a second sleeve portion, and wherein the telescoping structures are a part of the first and second sleeve portions.
7. (Currently Amended) The plunger-type pump packing cartridge according to Claim 6, wherein the first sleeve portion is ~~adapted to be~~ positioned in at least a portion of the packing bore; and the second sleeve portion has at least a portion thereof telescopically positioned in at least a portion of the first sleeve portion.
8. (Currently Amended) The plunger-type pump packing cartridge according to Claim 6, wherein the first abutment ring is operatively connected to the first sleeve portion and the second abutment ring is operatively connected to the second sleeve portion.
9. (Currently Amended) The plunger-type pump packing cartridge according to Claim 6, wherein the first abutment ring is integrally formed with the first sleeve portion and the second abutment ring is integrally formed with the second sleeve portion.
10. (Currently Amended) The plunger-type pump packing cartridge according to Claim 6, further comprising a spacer ring operatively positioned to cover the overlapping travel the telescoping structures between the first and second sleeve portions, wherein the spacer ring is

positioned to help prevent seepage of fluid into any clearances between the first sleeve portion and the second sleeve portion.

11. (Currently Amended) The plunger-type pump packing cartridge according to Claim 1, wherein the telescoping structures are a part of the sleeve and one of the first and second abutment rings.

12. (Currently Amended) The plunger-type pump packing cartridge according to Claim 11, wherein the other one of the first and second abutment rings is integrally formed with the sleeve.

13. (Currently Amended) The plunger-type pump packing cartridge according to Claim 1, wherein the retaining ring comprises a resilient ring ~~adapted to be~~ positioned in a groove in one of the telescoping structures, whereby the resilient ring frictionally engages the other telescoping structure to resist separation of the telescoping structures.

14. Canceled.

15. (Currently Amended) The plunger-type pump packing cartridge according to Claim 1, further comprising: packing positioned between the first abutment ring and the second abutment ring.

16. (Currently Amended) The plunger-type pump packing cartridge according to Claim 15, wherein the packing further comprises a plurality of packing elements.

17. (Currently Amended) The plunger-type pump packing cartridge according to Claim 16, wherein at least one packing spacer is positioned between any two of the plurality of packing elements.

18 – 64. Canceled.

65. (Currently Amended) A plunger-type pump comprising:
a packing bore for a reciprocating plunger packing cartridge ~~for use in a packing bore of a~~
~~plunger-type pump~~, wherein the packing bore has a generally cylindrical interior wall and a seat
and a removable gland, and;

a [[the]] packing cartridge, wherein the packing cartridge comprises comprising:

a. a first element comprising:

i. a first sleeve portion ~~adapted to be~~ positioned in at least a portion of the
packing bore; and

ii. a first abutment ring positioned to extend inwardly and substantially
circumferentially relative to the first sleeve portion; and

b. a second element comprising:

i. a second sleeve portion having at least a portion thereof telescopically
positioned in at least a portion of the first sleeve portion; and

ii. a second abutment ring positioned to extend inwardly and substantially
circumferentially relative to the second sleeve portion; and

c. a means for axially retaining the first and second sleeve portions together;

wherein the first sleeve portion and the second sleeve portion and the means for axially
retaining are operatively positioned between the first abutment ring and the second abutment ring
to allow for squeezing of the first abutment ring and second abutment ring co-axially closer to
one another; and

wherein the packing cartridge is ~~adapted to be~~ positioned in the packing bore between the
seat and the removable gland ~~[[and]]~~ so that the squeezing of the first abutment ring and the
second abutment ring closer together ~~is can be~~ provided by tightening the removable gland over
the packing cartridge.

66. (Currently Amended) The plunger-type pump packing cartridge according to Claim 65,
further comprising a spacer ring operatively positioned to cover the overlapping travel of the first
and second sleeve portions, wherein the spacer ring is positioned to help prevent seepage of fluid
into any clearances between the first sleeve portion and the second sleeve portion.

67 – 75. Canceled.

76. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 65, further comprising: a spring operatively positioned between the first abutment ring and the second abutment ring.

77. Canceled.

78. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 76, wherein the telescoping first and second sleeve portions have at least sufficient overlapping travel to help maintain the first abutment ring and second abutment ring in substantial co-axial alignment while the spring is anywhere between a substantially relaxed condition and a substantially compressed condition.

79. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 65, further comprising: packing positioned between the first abutment ring and the second abutment ring.

80. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 79, wherein the packing further comprises a plurality of packing elements.

81. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 80, wherein at least one packing spacer is positioned between any two of the plurality of packing elements.

82. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 65, wherein the first abutment ring is integrally formed with the first sleeve portion and the second abutment ring is integrally formed with the second sleeve portion.

83 – 129. Canceled.

130. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 65, wherein the means for axially retaining comprises:

a. a retaining groove and an interference surface cooperatively positioned between the first and second sleeve portions; and

b. a resilient ring positioned in the retaining groove for frictionally engaging the interference surface, whereby when the resilient ring in the retaining groove is moved axially against the interference surface, the resilient ring frictionally engages the interference surface and resists separation of the first and second sleeve portions.

131. Canceled.

132. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 1, wherein the telescoping structures and the retaining ring are operative to allow a packing to be held in a pre-assembled but relaxed condition.

133. Canceled.

134. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 65, wherein the first and second sleeve portions and the means for axially retaining are operative to allow a packing to be held in a pre-assembled but relaxed condition.

135. (Currently Amended) A plunger-type pump comprising:
a packing bore for a reciprocating plunger packing cartridge ~~for use in a packing bore of a~~
~~plunger-type pump~~, wherein the packing bore has a generally cylindrical interior wall and a seat
and a removable gland, and;

a [[the]] packing cartridge, wherein the packing cartridge comprises ~~comprising:~~

- a. a generally-cylindrical sleeve having an outer cylindrical profile ~~adapted to be~~ at
least partially positioned in the packing bore;
- b. a first abutment ring positioned in the sleeve;
- c. a second abutment ring positioned in the sleeve and co-axially spaced apart from
the first abutment ring;
- d. packing positioned between the first abutment ring and the second abutment ring;
- e. telescoping structures operatively positioned between the first abutment ring and
the second abutment ring to allow for squeezing of the first abutment ring and second abutment
ring co-axially closer to one another; and
- f. a retaining ring operatively positioned between the telescoping structures to retain
the telescoping structures together and to allow for squeezing of the first abutment ring and
second abutment ring co-axially closer to one another;

wherein the packing cartridge is ~~adapted to be~~ positioned in the packing bore between the
seat and the removable gland ~~[[and]]~~ so that the squeezing of the first abutment ring and the
second abutment ring closer together can be provided by tightening the removable gland over the
packing cartridge; and

wherein the telescoping structures and the retaining ring are operative to allow the
packing to be held in a pre-assembled but relaxed condition.

136. (Currently Amended) The plunger-type pump packing cartridge according to
Claim 135, further comprising: a spring operatively positioned between the first abutment ring
and the second abutment ring.

137. (Currently Amended) The plunger-type pump packing cartridge according to
Claim 136, wherein the telescoping structures have at least sufficient overlapping travel to help

maintain the first abutment ring and second abutment ring in substantial co-axial alignment while the spring is anywhere between a substantially relaxed condition and a substantially compressed condition.

138. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 137, wherein the sleeve further comprises a first sleeve portion and a second sleeve portion, and wherein the telescoping structures are a part of the first and second sleeve portions.

139. (Currently Amended) The ~~plunger-type pump packing cartridge~~ according to Claim 138, further comprising a spacer ring operatively positioned to cover the overlapping travel of the telescoping structures between the first and second sleeve portions, wherein the spacer ring is positioned to help prevent seepage of fluid into any clearances between the first sleeve portion and the second sleeve portion.